

What is claimed is:

1. A method for identifying a compound suitable for treating a cardiovascular disorder comprising:
- 5 a) contacting a PCIP polypeptide or a fragment thereof, or a cell expressing a PCIP polypeptide or a fragment thereof, with a test compound; and
- b) determining whether said PCIP polypeptide or fragment thereof, binds to said test compound, thereby identifying a compound suitable for treating a cardiovascular disorder.
- 10 2. The method of claim 1, wherein the binding of said test compound to said PCIP polypeptide or fragment thereof, is detected by a method selected from the group consisting of:
- 15 a) detection of binding by direct detection of test compound/polypeptide binding;
- b) detection of binding using a competition binding assay; and
- c) detection of binding using an assay for PCIP activity.
3. A method for identifying a compound suitable for treating a cardiovascular disorder, comprising:
- 20 a) incubating a cell expressing i) a potassium channel comprising a Kv4.3 or Kv4.2 subunit, or a fragment of a potassium channel comprising a Kv4.3 or Kv4.2 subunit, and ii) a PCIP polypeptide or a fragment thereof, in the presence and absence of a candidate compound; and
- 25 b) determining whether the presence of the candidate compound modulates the interaction of the potassium channel or fragment thereof with said PCIP polypeptide or fragment thereof, thereby identifying a compound suitable for treating a cardiovascular disorder.
- 30 4. A method for treating a cardiovascular disorder comprising contacting a potassium channel with an effective amount of a compound that modulates the binding of a PCIP protein to said potassium channel.
5. A method for determining if a subject is at risk for a cardiovascular disorder comprising detecting, in a sample of cells from the subject an alteration in a PCIP gene which causes a mutated PCIP polypeptide to be produced.
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6. A method for determining if a subject is at risk for a cardiovascular disorder comprising detecting, in a sample of cells from the subject an alteration in a PCIP gene which causes abnormal expression of a PCIP polypeptide.
- 5 7. A method for determining if a subject is at risk for a cardiovascular disorder comprising detecting, in a sample of cells from the subject an alteration in a PCIP gene which causes abnormal processing of a PCIP polypeptide.
8. A method for identifying a subject suffering from a cardiovascular disorder
10 comprising detecting, in a sample of cells from the subject an alteration in a PCIP gene which causes a mutated PCIP polypeptide to be produced.
9. A method for identifying a subject suffering from a cardiovascular disorder
15 comprising detecting, in a sample of cells from the subject an alteration in a PCIP gene which causes abnormal expression of a PCIP polypeptide.
10. A method for identifying a subject suffering from a cardiovascular disorder
comprising detecting, in a sample of cells from the subject an alteration in a PCIP gene which causes abnormal processing of a PCIP polypeptide.
- 20 11. The method of any one of claims 1, 3, 4, 5, 6, 7, 8, 9, or 10, wherein said cardiovascular disorder is associated with an abnormal I_{to} current.
12. The method of any one of claims 1, 3, 4, 5, 6, 7, 8, 9, or 10, wherein said
25 PCIP is 9q.
13. The method of any one of claims 1, 3, 4, 5, 6, 7, 8, 9, or 10, wherein said
PCIP is 8t.
- 30 14. The method of any one of claims 1, 3, 4, 5, 6, 7, 8, 9, or 10, wherein said
PCIP is p19.
15. The method of any one of claims 1, 3, 4, 5, 6, 7, 8, 9, or 10, wherein said
cardiovascular disorder is long-QT syndrome.
- 35 16. The method of any one of claims 1, 3, 4, 5, 6, 7, 8, 9, or 10, wherein said
cardiovascular disorder is congestive heart failure.